

Advanced Algebra
Exponential Functions
Graphing Intro

Name _____
Hour _____

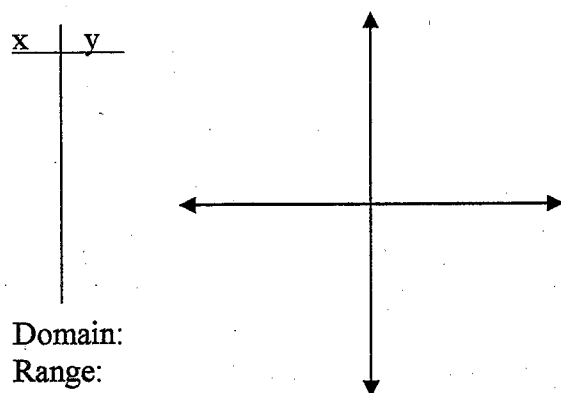
Without graphing, determine whether each equation represents exponential growth or exponential decay. Explain. Find "r".

1. $y = 72(1.6)^x$ 2. $y = 24(0.8)^x$ 3. $y = 3(6/5)^x$ 4. $y = 7(2/3)^x$

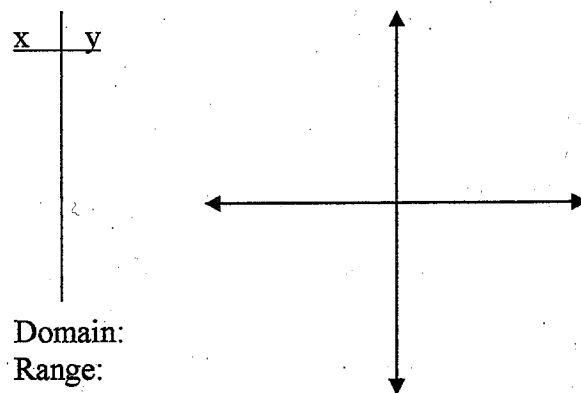
5. $y = 5/4(0.11)^x$ 6. $A(t) = -1000(1.075)^t$ 7. $y = (2)^{-x}$

Complete each t-chart and graph.

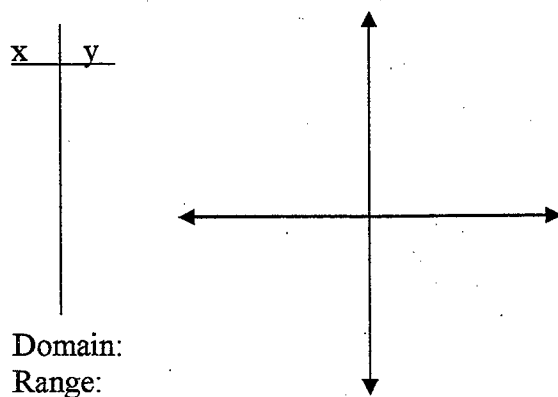
8. $y = 2^x$



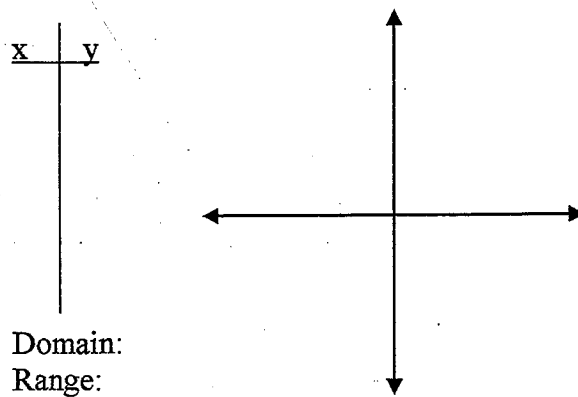
9. $y = (1/3)^x$



10. $y = (0.75)^x$



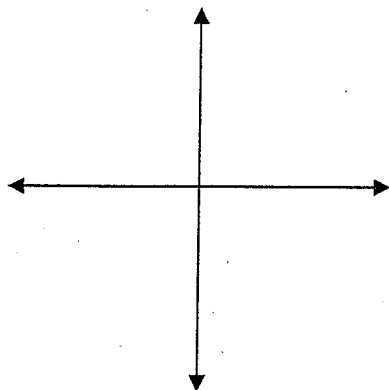
11. $y = 4^x$



12. $y = 2(1/5)^x$

x y

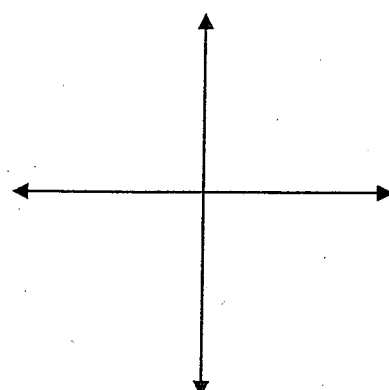
Domain:
Range:



13. $y = 3^{x+1}$

x y

Domain:
Range:



Solve.

14. $7 = 49^x$

15. $(1/4)^x = 16$

16. $4^{4x} = 2^{x+6}$

17. $4^{5x} = (1/2)^{x-2}$

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Without graphing, determine whether each equation represents exponential growth or exponential decay. Explain.

1. $y = 72(1.6)^x$

G

$r = +60\%$

2. $y = 24(0.8)^x$

D

$r = -20\%$

3. $y = 3(6/5)^x$

G

$r = +20\%$

4. $y = 7(2/3)^x$

D

$r = -.33\%$

5. $y = 5/4(0.11)^x$

D

$r = -.89\%$

6. $A(t) = -1000(1.075)^t$

G

$r = +7.5$

7. $y = (2)^{-x}$

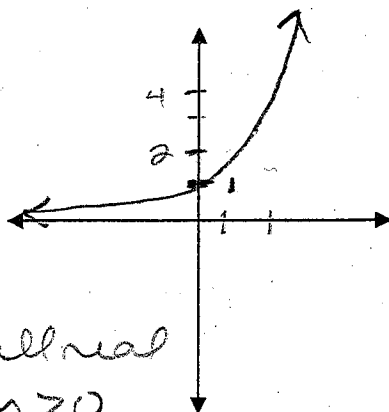
D

$r = -100\%$

Complete each t-chart and graph.

8. $y = 2^x$

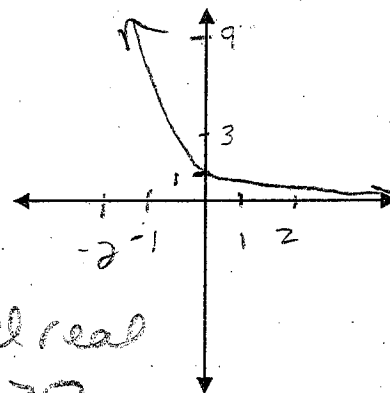
x	y
-2	$\frac{1}{4}$
-1	$\frac{1}{2}$
0	1
1	2
2	4



Domain: all real
Range: $y > 0$

9. $y = (1/3)^x$

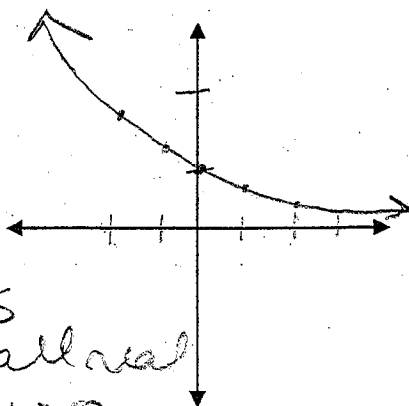
x	y
-2	9
-1	3
0	1
1	$\frac{1}{3}$
2	$\frac{1}{9}$



Domain: all real
Range: $y > 0$

10. $y = (0.75)^x$

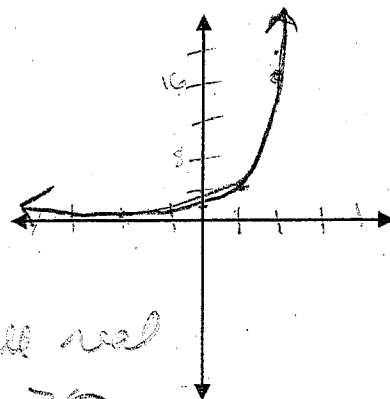
x	y
-2	1.78
-1	1.33
0	1
1	.75
2	.5625



Domain: all real
Range: $y > 0$

11. $y = 4^x$

x	y
-2	$\frac{1}{16}$
-1	$\frac{1}{4}$
0	1
1	4
2	16

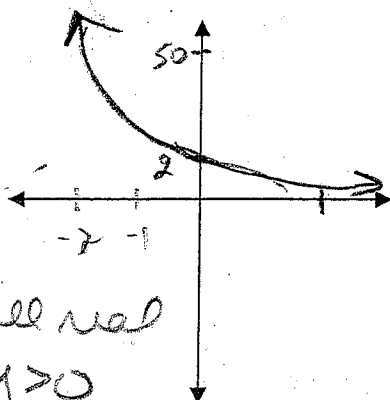


Domain: all real
Range: $y > 0$

12. $y = 2(1/5)^x$

x	y
-2	50
-1	10
0	2
1	$\frac{2}{5}$
2	$\frac{2}{25}$

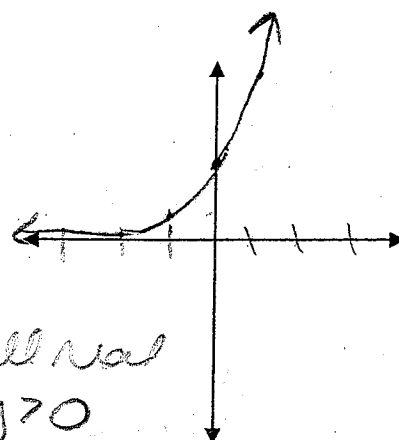
Domain: all real
Range: $y > 0$



13. $y = 3^{x+1}$

x	y
-2	$\frac{1}{3}$
-1	1
0	3
1	9
2	27

Domain: all real
Range: $y > 0$



Solve.

14. $7 = 49^x$

$$7 = (7^2)^x$$

$$1 = 2x$$

$$x = 1/2$$

15. $(1/4)^x = 16$

$$2^{-2x} = 2^4$$

$$-2x = 4$$

$$x = -2$$

16. $4^{4x} = 2^{x+6}$

$$2^{8x} = 2^{x+6}$$

$$8x = x+6$$

$$\frac{7x}{7} = \frac{6}{7}$$

$$x = 6/7$$

17. $4^{5x} = (1/2)^{x-2}$

$$2^{10x} = 2^{-x+2}$$

$$10x = -x+2$$

$$\frac{11x}{11} = \frac{2}{11}$$

$$x = 2/11$$